

United States [change country](#)search 

GO

[Home](#)[Products & Services](#)[Custom Primers](#)[Technical Resources](#)[About Invitrogen](#)[home](#) > [technical resources](#) > [media formulations](#)

## Technical Resources - Media Formulations

### Technical Resources

- [Brochures and Product Info](#)
- [Cell Line Database](#)
- [Certificate of Analysis](#)
- [Citations](#)
- [Contact Technical Services](#)
- [Expression Wizard](#)
- [FAQs](#)
- [Limited Use Label Licenses](#)
- [Manuals and Product Inserts](#)
- [Media Formulations](#)
- [MSDS](#)
- [Newsletters and Journals](#)
- [Online Seminars](#)
- [Protocols](#)
- [Transfection Collection](#)
- [Vector Data](#)

## Medium

[Advanced DMEM](#) | [Advanced MEM](#) | [BGJb](#) | [BME](#) | [BMOC](#) | [Cell Culture Freezing Medium](#) | [CMRL](#) | [DMEM High Glucose](#) | [DMEM Low Glucose](#) | [DMEM/F12](#) | [F10 \(Ham's\)](#) | [F12 \(Ham's\)](#) | [GMEM \(Glasgow\)](#) | [Grace's Insect Media](#) | [Improved MEM Zn Option](#) | [IPL-41 Medium](#) | [IMDM \(Iscove's\)](#) | [Leibovitz's L-15](#) | [M199](#) | [McCoy's 5A](#) | [MCDB 131](#) | [alpha-MEM](#) | [MEM \(Earle's\) with gln](#) | [MEM \(Earle's\) without gln](#) | [MEM \(Hank's\)](#) | [Modified Eagle Media \(2X\)](#) | [NCTC-109](#) | [RPMI 1640](#) | [Schneider's Drosophila Medium](#) | [TC-100 Insect Media](#) | [Waymouth's MB 752/1](#) | [Williams' Media E](#)

## Plant Medium:

[Gamborg's B-5](#) | [Murashige and Skoog](#)

## Microbiological Media

[LB](#) | [NZ](#) | [Other](#)

## Salt Solutions:

[DPBS \(Dulbecco's\)](#) | [EBSS \(Earle's\)](#) | [HBSS \(Hank's\)](#) | [PBS](#)

## Reagents:

[G-5 Supplement](#) | [N-2 Supplement](#) | [MEM Supplements](#)

## Advanced Media

Advanced media are defined media formulations designed to reduce significantly the amount of serum required for cultivating mammalian cell in vitro.

<a href="#">12491</a>	<a href="#">Advanced D-MEM</a>
<a href="#">12492</a>	<a href="#">Advanced MEM</a>

**BGJb Medium (Fitton-Jackson Modification)**

BGJb Medium was originally formulated for the growth of fetal rat long bones in a chemically defined medium.

<u>12591</u>	BGJb Medium (Fitton Jackson Modification) (1X), liquid
	Contains L-glutamine

[top](#)

**Basal Medium Eagle (BME)**

Basal Media Eagle are well suited for use with diploid or primary mammalian cell cultures.

<u>21010</u>	Basal Medium Eagle (BME) (1X), liquid
	Contains Earle's salts, but no L-glutamine

[top](#)

**Brinster's BMOC-3 Medium**

<u>11126</u>	Brinster's BMOC-3 Medium, liquid
	Contains bovine serum albumin, but no antibiotics

[top](#)

**Cell Culture Freezing Media**

Cell Culture Freezing Medium is suitable for the consistent cryopreservation of a broad spectrum of mammalian cells.

<u>11101</u>	Cell Culture Freezing Medium-Dimethylsulfoxide (DMSO), liquid
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[top](#)

**CMRL Media**

Connaught Medical Research Labs (CMRL) media are well suited for

growth of Earle's "L" cells. They are also especially useful for cloning monkey kidney cell cultures and for growth of other mammalian cell lines when enriched with horse or calf serum.

#### Standard Formulation:

<b>11530</b>	CMRL Medium-1066 (1X), liquid
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[top](#)

### DULBECCO'S MODIFIED EAGLE MEDIA (D-MEM)

Dulbecco's Modified Eagle Media (D-MEM) are well suited for supporting growth of a broad spectrum of mammalian cell lines. High Glucose with L-Glutamine, High Glucose without L-Glutamine, Low Glucose with L-Glutamine, High Glucose with L-Glutamine formulations are available.

#### Dulbecco's Modified Eagle Media (D-MEM), *High Glucose, with L-glutamine*

#### Standard Formulation:

<b>11965</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	<b>High Glucose:</b> Contains 4,500 mg/L D-glucose (high glucose), L-glutamine, and pyridoxine HCl, but no sodium pyruvate

#### Modifications:

<b>11995</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 110 mg/L sodium pyruvate, 4,500 mg/L D-glucose, L-glutamine, and pyridoxine HCl.
<b>12430</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 25 mM HEPES buffer, 4,500 mg/L D-glucose, L-glutamine, and pyridoxine HCl but no sodium pyruvate.
<b>21063</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Without phenol red. Contains 25 mM HEPES buffer, 4,500 mg/L D-glucose, L-glutamine, and pyridoxine HCl but no sodium pyruvate.
<b>11971</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Without sodium phosphate and sodium pyruvate. Contains 4,500 mg/L D-glucose, L-glutamine, and pyridoxine HCl.

#### Powder:

<b>12100</b>	Dulbecco's Modified Eagle Medium (DMEM), powder (high glucose)
	Contains 4,500 mg/L D-glucose, L-glutamine, and pyridoxine HCl. Without sodium pyruvate and sodium bicarbonate.
<b>12800</b>	Dulbecco's Modified Eagle Medium (DMEM), powder (high glucose)
	Contains 4,500 mg/L D-glucose, L-glutamine, 110 mg/L sodium pyruvate, and pyridoxine HCl. Without sodium bicarbonate.

[top](#)

**Dulbecco's Modified Eagle Media: *high glucose, without L-glutamine*****Standard Formulation:**

<b>11960</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 4,500 mg/L D-glucose, and pyridoxine HCl. Without L-glutamine and sodium pyruvate.
<b>Modifications:</b>	
<b>10313</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 4,500 mg/L D-glucose, pyridoxine HCl and <b>sodium pyruvate</b> . Without L-glutamine.
<b>31053</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 4,500 mg/L D-glucose, and pyridoxine HCl. <b>Without</b> L-glutamine, sodium pyruvate, and <b>phenol red</b> .
<b>21013</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 4,500 mg/L D-glucose, and pyridoxine HCl. <b>Without</b> L-glutamine, sodium pyruvate, <b>L-methionine</b> , and <b>L-cystine</b> .
<b>21068</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains 4,500 mg/L D-glucose, and pyridoxine HCl. <b>Without</b> L-glutamine, sodium pyruvate, and <b>calcium chloride</b> .

[top](#)**GLUTAMAX™ Modifications:**

<b>10566</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Without sodium pyruvate. Contains the dipeptide L-Alanyl-L-Glutamine substituted on a molar equivalent basis for L-glutamine. Contains pyridoxine HCl.
<b>10569</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains the dipeptide L-Alanyl-L-Glutamine substituted on a molar equivalent basis for L-glutamine. <b>Contains sodium pyruvate</b> and pyridoxine HCl.
<b>10564</b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (high glucose)
	Contains the dipeptide L-Alanyl-L-Glutamine substituted on a molar equivalent basis for L-glutamine. <b>Contains HEPES buffer</b> and pyridoxine HCl. Without sodium pyruvate.

[top](#)**Dulbecco's Modified Eagle Media: *low glucose, with L-glutamine*****Standard Formulation:**

<b><u>11885</u></b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (low glucose)
	Contains 1,000 mg/L D-glucose, L-glutamine, pyridoxine HCl, and 110 mg/L sodium pyruvate.
<b>Modifications:</b>	
<b><u>11966</u></b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (no glucose)
	<b>Without glucose</b> and sodium pyruvate. Contains L-glutamine and pyridoxine HCl.
<b><u>12320</u></b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (low glucose)
	Contains 1,000 mg/L D-glucose, L-glutamine, <b>25mM HEPES buffer</b> , pyridoxine HCl, and 110 mg/L sodium pyruvate.
<b>Powder:</b>	
<b><u>31600</u></b>	Dulbecco's Modified Eagle Medium (DMEM), powder (low glucose)
	Without sodium bicarbonate. Contains 1,000 mg/L D-glucose, L-glutamine, pyridoxine HCl and 110 mg/L sodium pyruvate.

[top](#)

<b>Dulbecco's Modified Eagle Media: low glucose, without L-glutamine</b>	
<b>Modifications:</b>	
<b><u>10567</u></b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (low glucose)
	Contains <b>GLUTAMAX™</b> (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine. Contains sodium pyruvate and pyridoxine HCl.
<b><u>11054</u></b>	Dulbecco's Modified Eagle Medium (DMEM) (1X), liquid (low glucose)
	Contains 1,000 mg/L D-glucose, pyridoxine HCl, and 110 mg/L sodium pyruvate. <b>Without L-glutamine and phenol red.</b>

[top](#)

**Dulbecco's Modified Eagle Medium : Nutrient Mixture F-12  
(D-MEM/F-12) 1:1 Mixture**

<b>Standard Formulation:</b>	
<b><u>11320</u></b>	DMEM/F-12, (1X), liquid, 1:1 Contains L-glutamine and pyridoxine HCl, but no HEPES buffer
<b>Modifications:</b>	
<b><u>11330</u></b>	DMEM/F-12, (1X), liquid, 1:1 Contains 15 mM HEPES buffer, L-glutamine and pyridoxine HCl
<b><u>11039</u></b>	DMEM/F-12, (1X), liquid, 1:1 Contains 15 mM HEPES buffer, L-glutamine and pyridoxine HCl, but <b>no phenol red</b>
<b><u>21041</u></b>	DMEM/F-12, (1X), liquid, 1:1 Contains L-glutamine and pyridoxine HCl, but <b>no HEPES buffer or phenol red.</b>
<b><u>10565</u></b>	DMEM/F-12, (1X), liquid, 1:1 Contains <b>GLUTAMAX™ I</b> (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine and pyridoxine HCl.
<b>Powder:</b>	
<b><u>12400</u></b>	DMEM/F-12, (1X), powder, 1:1 Contains 15 mM HEPES buffer, L-glutamine and pyridoxine HCl, but no sodium bicarbonate.
<b><u>12500</u></b>	DMEM/F-12, (1X), powder, 1:1 Contains L-glutamine and pyridoxine HCl, but <b>no HEPES buffer or sodium bicarbonate.</b>

[top](#)

<b>With Calcium and Magnesium:</b>	
<b><u>14040</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS) (1X), liquid (1X): Contains calcium and magnesium.
<b><u>14080</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS) (10X), liquid (10X): pH: The pH of 10X is 4.4 to 4.7. The pH of 1X will be acidic after 1:10 dilution and must be adjusted to 7.1 ± 0.1.
<b><u>21300</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS), powder (Powder): Contains magnesium. Calcium chloride is supplied separately in an amount sufficient for 0.1 g/L

<b>Without Calcium and Magnesium:</b>	
<b><u>14190</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS) (1X), liquid
	(1X): Contains no calcium or magnesium.
<b><u>14200</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS) (10X), liquid
	(10X): Contains no calcium or magnesium.
<b><u>21600</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS), powder
	(Powder): Contains no calcium or magnesium.
<b>Contains 1,000 mg/L D-glucose, calcium, magnesium, and 36 mg/L sodium pyruvate.</b>	
<b><u>14287</u></b>	Dulbecco's Phosphate-Buffered Saline (D-PBS) (1X), liquid
	(1X): Contains 1,000 mg/L D-glucose and 36 mg/L sodium pyruvate, calcium, and magnesium, but <b>no phenol red.</b>

[top](#)**Earle's Balanced Salt Solutions****Without Calcium and Magnesium:**

<b><u>14155</u></b>	Earle's Balanced Salt Solution (EBSS) (1X), liquid
	Contains no calcium, magnesium, or phenol red.

[top](#)**F-10 Nutrient Mixtures**

F-10 Nutrient Mixture (Ham) was originally Formulated for serum-free growth of Chinese Hamster Ovary cells and growth of various mammalian cell lines with serum-supplementation.

**Standard Formulation:**

<b><u>11550</u></b>	F-10 Nutrient Mixture (Ham) (1X), liquid
	(1X): Contains L-glutamine.

**Modifications:**

<b><u>12390</u></b>	F-10 Nutrient Mixture (Ham) (1X), liquid
	(1X): Contains 25mM HEPES buffer and L-glutamine.



[top](#)**F-12 Nutrient Mixtures**

F-12 Nutrient Mixture was originally formulated for single-cell plating of near-diploid Chinese Hamster Ovary cells.

**Standard Formulation:**

<b>11765</b>	F-12 Nutrient Mixture (Ham) (1X), liquid
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	Contains L-glutamine.
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**Modifications:**

<b>21127</b>	F-12K Nutrient Mixture, Kaighn's Modification (1X), liquid
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	<b>Kaighn's Modification:</b> Contains L-glutamine.
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<b>31765</b>	F-12 Nutrient Mixture (Ham) (1X), liquid
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	Contains <b>GLUTAMAX™ I</b> (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine.
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**Powder:**

<b>21700</b>	F-12 Nutrient Mixture (Ham), powder
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	Contains L-glutamine but no sodium bicarbonate.
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[top](#)**G-5 Supplement (100X)**

<b>17503</b>	G-5 Supplement (100X)
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	For the growth and expression of glial cells (normal and tumor) of astrocytic phenotype.
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[top](#)**Glasgow Minimum Essential Media**

Glasgow Minimum Essential Media were originally formulated to support the growth of BHK-21 cells.

<b>11710</b>	Glasgow Minimum Essential Medium (G-MEM, BHK-21) (1X), liquid
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	<b>(1X):</b> Contains L-glutamine, but no tryptose phosphate broth.
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[top](#)**Grace's Insect Cell Culture Media****Standard Formulation:**

<b><u>11605</u></b>	Grace's Insect Cell Culture Medium, Supplemented (1X), liquid
	<b>Grace's Supplemented:</b> Contains 3,330 mg/L lactalbumin hydrolysate, 3,330 mg/L yeastolate, and L-glutamine but no insect hemolymph. Insect cell culture tested.

**Modifications:**

<b><u>11595</u></b>	Grace's Insect Cell Culture Medium (1X), liquid
	Contains L-glutamine, but <b>no L-methionine</b> or insect hemolymph. Insect cell culture tested.

**2X Formulation for Plaque Assays:**

<b><u>11667</u></b>	Grace's Insect Cell Culture Medium (2X), liquid
	Contains lactalbumin hydrolysate, yeastolate, and L-glutamine

**Powder:**

<b><u>11300</u></b>	Grace's Insect Cell Culture Medium, powder
	Contains L-glutamine, but no sodium bicarbonate. Insect cell culture tested.

[top](#)**Hank's Balanced Salt Solutions****With Calcium and Magnesium:**

<b><u>24020</u></b>	Hank's Balanced Salt Solution (HBSS) (1X), liquid
	(1X): Contains calcium and magnesium
<b><u>14025</u></b>	Hank's Balanced Salt Solution (HBSS) (1X), liquid
	(1X): Contains calcium and magnesium, but <b>no phenol red</b> .
<b><u>14065</u></b>	Hank's Balanced Salt Solution (HBSS) (10X), liquid
	(10X): Contains calcium and magnesium, but no sodium bicarbonate <b>or phenol red</b> .

**Without Calcium and Magnesium:**

<b><u>14170</u></b>	Hank's Balanced Salt Solution (HBSS) (1X), liquid
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	(1X): Contains no calcium chloride, magnesium chloride or magnesium sulfate.
<b>14175</b>	Hank's Balanced Salt Solution (HBSS) (1X), liquid
	(1X): Contains no calcium chloride, magnesium chloride, magnesium sulfate, or <b>phenol red</b> .
<b>14185</b>	Hank's Balanced Salt Solution (HBSS) (10X), liquid
	(10X): Contains no calcium chloride, magnesium chloride, magnesium sulfate, sodium bicarbonate, or <b>phenol red</b> .

[top](#)

Improved MEM Zn <sup>++</sup> Option (Richter's Modification)	
<b>10373</b>	Improved MEM Zn <sup>++</sup> Option (Richter's Modification), liquid
	Contains L-glutamine, L-proline at 2 mg/L, and gentamicin sulfate at 50 µg/mL, but no insulin, HEPES, or <b>phenol red</b> .

[top](#)

IPL-41 Insect Media	
<b>11405</b>	IPL-41 Insect Medium (1X), liquid
	(1X): Contains L-glutamine, calcium chloride, and sodium bicarbonate, but no tryptose phosphate broth. Insect cell culture tested.
<b>31400</b>	IPL-41 Insect Medium, powder
	( <b>powder</b> ): Contains L-glutamine and calcium chloride, but no sodium bicarbonate or tryptose phosphate broth. Insect cell culture tested.

[top](#)

### Iscove's Modified Dulbecco's Media

Iscove's Modified Dulbecco's Media are highly enriched synthetic media. They are well suited for rapidly proliferating, high-density cultures.

#### Standard Formulation:

<b><u>12440</u></b>	Iscove's Modified Dulbecco's Medium (IMDM) (1X), liquid
	Contains L-glutamine, 25mM HEPES buffer, and 3,024 mg/L sodium bicarbonate, but no alpha-thioglycerol, beta-mercaptoethanol.
<b>Modifications:</b>	
<b><u>21056</u></b>	Iscove's Modified Dulbecco's Medium (IMDM) (1X), liquid
	Contains L-glutamine, 25mM HEPES buffer, and 3,024 mg/L sodium bicarbonate, but no alpha-thioglycerol, beta-mercaptoethanol <b>or phenol red</b> .
<b><u>31980</u></b>	Iscove's Modified Dulbecco's Medium (IMDM) (1X), liquid
	Contains <b>GLUTAMAX™ I</b> (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine.
<b>Powder:</b>	
<b><u>12200</u></b>	Iscove's Modified Dulbecco's Medium (IMDM) (1X), powder
	Contains L-glutamine, 25mM HEPES buffer, but no sodium bicarbonate, alpha-thioglycerol, or beta-mercaptoethanol.

[top](#)**Leibovitz's L-15 Media**

Leibovitz's L-15 Media are well suited for supporting cell growth in non-CO<sub>2</sub>-equilibrated environments. These formulations were developed without a sodium bicarbonate buffer system.

<b>Standard Formulation:</b>	
<b><u>11415</u></b>	Leibovitz's L-15 Medium (1X), liquid
	Contains L-glutamine.
<b>Modification:</b>	
<b><u>21083</u></b>	Leibovitz's L-15 Medium (1X), liquid
	Contains L-glutamine, but <b>no phenol red</b> .
<b>Powder:</b>	
<b><u>41300</u></b>	Leibovitz's L-15 Medium, powder
	Contains L-glutamine, but <b>no sodium bicarbonate</b> .

[top](#)**McCoy's 5A Media (modified)**

McCoy's Media were originally formulated for the propagation of human lymphocytes. McCoy's 5A medium (modified) was based on the original formulation of McCoy as modified by Hsu and Kellog and further modified by Iwakata and Grace.

**Standard Formulation:**

<b><u>16600</u></b>	McCoy's 5A Medium (modified) (1X), liquid
	Contains L-glutamine.

**Modifications:**

<b><u>12330</u></b>	McCoy's 5A Medium (modified) (1X), liquid
	Contains L-glutamine and 25mM HEPES buffer.

[top](#)**MCDB 131 Medium**

MCDB 131 was originally developed by Knedler and Ham as a reduced serum-supplemented medium for the culture of human microvascular endothelial cells. This formulation has been reported to support clonal growth of human microvascular cells when supplemented with 0.7% dialyzed FBS, 10 ng/ml EGF, and 1 µg/ml hydrocortisone.

<b><u>10372</u></b>	MCDB 131 Medium, liquid
	Contains no L-glutamine.

[top](#)**Microbiological Media****LB Media**

<b><u>22700</u></b>	LB Agar, powder (Lennox L Agar)
<b><u>12780</u></b>	LB Broth Base, powder (Lennox L Broth Base)
<b><u>10855</u></b>	LB Broth (1X), liquid

**NZ Media**

<b><u>13655</u></b>	NZCYM Broth, powder
<b><u>13635</u></b>	NZY Broth, powder
<b><u>23650</u></b>	NZYDT Broth, powder

**Other Media**

<u>22711</u>	Terrific Broth
<u>22712</u>	2-YT Broth
<u>10090</u>	YM Medium, powder

[top](#)

**MEDIA 199**

Media 199 were originally formulated for nutritional studies of chick embryo fibroblasts.

**Medium 199: *with Earle's salts*****Standard Formulation:**

<u>11150</u>	Medium 199 (1X), liquid Contains Earle's salts, L-glutamine, and 2,200 mg/L sodium bicarbonate.
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**Modifications:**

<u>12340</u>	Medium 199 (1X), liquid Contains Earle's salts, 2,200 mg/L sodium bicarbonate, L-glutamine, and <b>25 mM HEPES</b> buffer.
<u>11043</u>	Medium 199 (1X), liquid Contains Earle's salts, L-glutamine, and 2,250 mg/L sodium bicarbonate, but <b>no phenol red</b> .
<u>11825</u>	Medium 199 (10X), liquid <b>(10X):</b> Contains Earle's salts, but no L-glutamine and no sodium bicarbonate.

**Powder:**

<u>31100</u>	Medium 199, powder Contains Earle's salts, and L-glutamine, but no sodium bicarbonate.
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[top](#)

**Medium 199: *with Hank's salts***

<u>12350</u>	Medium 199 (1X), liquid Contains Hank's salts, <b>25 mM HEPES</b> buffer, and L-glutamine.
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[top](#)

## MINIMUM ESSENTIAL MEDIA (MEM)

Minimum Essential Media are patterned after Eagle's Media, and are well suited for the growth of a broad spectrum of mammalian cells.

**Minimum Essential Media (MEM): with Earle's salts, with L-glutamine**

### Standard Formulations:

- 11095** Minimum Essential Medium (MEM) (1X), liquid  
(1X): Contains Earle's salts and L-glutamine.
- 61100** Minimum Essential Medium (MEM), powder  
(Powder): Contains Earle's salts and L-glutamine, but no sodium bicarbonate.

### Modifications:

#### MEM, alpha Modification:

- 12561** Minimum Essential Medium (MEM) alpha Medium (1X), liquid  
Contains L-glutamine, but **no ribonucleosides or deoxyribonucleosides.**
- 12571** Minimum Essential Medium (MEM) alpha Medium (1X), liquid  
**Contains L-glutamine, ribonucleosides, and deoxyribonucleosides.**
- 41061** Minimum Essential Medium (MEM) alpha Medium (1X), liquid  
Contains L-glutamine, ribonucleosides, and deoxyribonucleosides, but **no phenol red.**
- 32561** Minimum Essential Medium (MEM) alpha Medium (1X), liquid  
**Contains GLUTAMAX™ I** (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine. Contains **no ribonucleosides or deoxyribonucleosides.**
- 32571** Minimum Essential Medium (MEM) alpha Medium (1X), liquid  
**Contains GLUTAMAX™ I** (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine. **Contains ribonucleosides and deoxyribonucleosides.**

**11900**

Minimum Essential Medium (MEM) alpha Medium, powder

**(Powder):** Contains L-glutamine, ribonucleosides, and deoxyribonucleosides, but no sodium bicarbonate.

**12000**

Minimum Essential Medium (MEM) alpha Medium, powder

**(Powder):** Contains L-glutamine, but **no ribonucleosides, and deoxyribonucleosides**, or sodium bicarbonate.

**41500**

Minimum Essential Medium (MEM), powder

**Contains** Earle's salts, L-glutamine, and **nonessential amino acids**, but no sodium bicarbonate.

top

**Minimum Essential Media (MEM): *with Earle's salts, without L-glutamine-***

**Standard Formulation:**

**11090**

Minimum Essential Medium (MEM) (1X), liquid

Contains Earle's salts, but no L-glutamine.

**11430**

Minimum Essential Medium (MEM) (10X), liquid

**(10X):** Contains Earle's salts but no L-glutamine or sodium bicarbonate.

**Modifications:**

**10370**

Minimum Essential Medium (MEM) (1X), liquid

**Contains** Earle's salts and **nonessential amino acids**, but no L-glutamine.

**12360**

Minimum Essential Medium (MEM) (1X), liquid

Contains Earle's salts and **25 mM HEPES buffer**, but no L-glutamine.

**51200**

Minimum Essential Medium (MEM) (1X), liquid

Contains Earle's salts but **no** L-glutamine or **phenol red**.

**11700**

Minimum Essential Medium (MEM), powder (autoclavable)

**Autoclavable:** Contains Earle's salts but no L-glutamine or sodium bicarbonate.

**Modified for suspension cultures.**

**11380**

Minimum Essential Medium (S-MEM) (1X), liquid

Contains Earle's salts, but no L-glutamine. **Modified for suspension cultures.**



- 12380** Minimum Essential Medium (S-MEM) (1X), liquid  
Contains Earle's salts and **25 mM HEPES buffer**, but no L-glutamine. **Modified for suspension cultures.**

**GLUTAMAX Modifications:**

- 41090** Minimum Essential Medium (MEM), liquid  
**Contains GLUTAMAX™ I** (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine. Contains Earle's salts.
- 42360** Minimum Essential Medium (MEM), liquid  
**Contains GLUTAMAX™ I** (the dipeptide L-Alanyl-L-Glutamine) substituted on a molar equivalent basis for L-glutamine. **Contains Earle's salts and HEPES buffer.**

[top](#)

**Minimum Essential Media (MEM): with *Hank's salts***

**Standard Formulations:**

- 11575** Minimum Essential Medium (MEM) (1X), liquid  
Contains Hank's salts and L-glutamine

[top](#)

**Modified Eagle Medium (MEM)**

- 11935** Modified Eagle Medium (MEM) (2X), liquid  
**(2X):** Contains sodium bicarbonate and L-glutamine, but **no phenol red.**

[top](#)

**MEM Supplements**

- 11120** MEM Vitamin Solution, (100X) liquid
- 11130** MEM Amino Acids Solution, (50X) liquid
- 11140** MEM Non-Essential Amino Acids Solution, (100X) liquid

[top](#)

## **Medium NCTC-109**

Medium NCTC-109 is well suited for the growth of hybridoma cell lines.

**21340**

Medium NCTC-109 (1X), liquid

Medium NCTC-109 is well suited for the growth of hybridoma cell lines. Contains no L-glutamine.

[top](#)

## **PLANT RESEARCH PRODUCTS**

### **Gamborg's B-5 Medium**

**21153**

Gamborg's B-5 Medium, powder

Contains no auxins, cytokinins, or agar.

[top](#)

### **Murashige and Skoog**

**11117**

Murashige and Skoog Salt Mixture, powder

Application(s): Base for most Murashige plant-specific formulations.

**10632**

Murashige and Skoog Salt and Vitamin Mixture, powder

Murashige and Skoog Salt and Vitamin Mixture (1) is a complete medium for plant tissue culture which contains both basal salts and essential vitamins in a premixed format for convenience and time savings. This mixture is simply dissolved in the appropriate volume of water and autoclaved. For semi-solid culture systems, agar is added before autoclaving.

**10494**

Murashige and Skoog Complete Medium-50X Concentrate

Murashige and Skoog Complete Medium-50X Concentrate contains Murashige and Skoog salts, sucrose, and vitamins. This medium is easy to prepare and can be used for most plant tissue culture applications.

**11118**

Murashige Minimal Organics Medium, powder

Contains no agar, and is pH adjusted with PHYTION®.

**23118** Murashige Minimal Organics Medium, powder  
Contains no sugar or agar, and is pH adjusted with PHYTION®.

**11154** Murashige and Skoog Macronutrients Salts, powder

**11155** Murashige and Skoog Micronutrients Salts, (100X), liquid

[top](#)

### **N-2 Supplement**

**17502** N-2 Supplement (100X), liquid

[top](#)

### **Phosphate-Buffered Salines (PBS)**

**20012** Phosphate-Buffered Saline (PBS) 7.2 (1X), liquid  
All GIBCO Phosphate-Buffered Salines contain monobasic potassium phosphate, sodium chloride, and dibasic sodium phosphate; some formulations may contain additional components. **pH: 7.2 ± 0.1**

**70013** Phosphate-Buffered Saline (PBS) 7.2 (10X), liquid  
All GIBCO Phosphate-Buffered Salines contain monobasic potassium phosphate, sodium chloride, and dibasic sodium phosphate; some formulations may contain additional components. **pH: 7.2 ± 0.1**

**10010** Phosphate-Buffered Saline (PBS) 7.4 (1X), liquid  
All GIBCO Phosphate-Buffered Salines contain monobasic potassium phosphate, sodium chloride, and dibasic sodium phosphate; some formulations may contain additional components. **pH: 7.4 ± 0.1**

**70011** Phosphate-Buffered Saline (PBS) 7.4 (10X), liquid  
All GIBCO Phosphate-Buffered Salines contain monobasic potassium phosphate, sodium chloride, and dibasic sodium phosphate; some formulations may contain additional components. **pH: 7.4 ± 0.1**

[top](#)

## RPMI Media 1640

RPMI (Roswell Park Memorial Institute) 1640 Media are enriched formulations with extensive applications for mammalian cells. They were originally formulated for suspension cultures or monolayer culture of human leukemic cells.

### RPMI Media 1640: *with L-glutamine*

#### Standard Formulation:

**11875** RPMI Medium 1640 (1X), liquid  
Contains L-glutamine.

#### Modifications:

**11835** RPMI Medium 1640 (1X), liquid  
Contains L-glutamine, but **no phenol red**.

**11879** RPMI Medium 1640 (1X), liquid  
Contains L-glutamine, but **no glucose**.

**22400** RPMI Medium 1640 (1X), liquid  
Contains **25 mM HEPES** buffer and L-glutamine.

#### Powder:

**31800** RPMI Medium 1640, powder  
Contains L-glutamine, but no sodium bicarbonate.

**23400** RPMI Medium 1640, powder  
Contains L-glutamine and **25 mM HEPES** buffer, but no sodium bicarbonate.

[top](#)

### RPMI Media 1640: *without L-glutamine*

#### Standard Formulation:

**21870** RPMI Medium 1640 (1X), liquid  
Contains no L-glutamine.

#### Modifications:

**61870** RPMI Medium 1640 (1X), liquid  
A **GLUTAMAX™ I** medium. Contains the dipeptide, L-Alanyl-L-Glutamine substituted on a molar equivalent basis for L-glutamine.

**72400** RPMI Medium 1640 (1X), liquid  
A **GLUTAMAX™ I** medium. Contains the dipeptide, L-Alanyl-L-Glutamine substituted on a molar equivalent

basis for L-glutamine. **Contains HEPES buffer.**

**27016**

RPMI Medium 1640 (**Folate-free**) (1X), liquid

[top](#)

**Schneider's Drosophila Medium**

**11720**

Schneider's Drosophila Medium (1X), liquid

Modified and insect cell culture tested

[top](#)

**TC-100 Insect Medium**

**11600**

TC-100 Insect Medium, powder

Contains L-glutamine and tryptose broth, but no sodium bicarbonate. Insect cell culture tested

[top](#)

**Waymouth's MB 752/1 Media**

Waymouth's MB 752/1 Media were originally formulated for studies on the nutrition, metabolism, and growth of Strain L sublines, NCTC clone 929.

**11220**

Waymouth's MB 752/1 Medium (1X), liquid

**(1X):** Contains L-glutamine.

[top](#)

**William's Media E**

William's Media E were originally formulated for long-term cell cultures of adult rat liver epithelial cells.

**12551**

William's Medium E (1X), liquid

**(1X):** Contains no L-glutamine.

[top](#)